Neocolonial Relations of Biopiracy in Vaccine Production and Distribution

Undergraduate Research Thesis

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by

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Abstract
The thesis explores structural violence and inequality in neocolonial settings. Within the theoretical framework of neocolonialism, illness and mortality due to preventable diseases is a major field of study. Specifically, the thesis focuses on biopiracy and the influenza vaccine distribution. Geographically, the thesis focuses on a biopiracy issue in Indonesia that occurred in 2007 and the subsequent events that followed. Indonesia was mandated by international law to share its influenza strains with a WHO committee known as the Global Influenza Surveillance and Response System (GISRS). However, WHO shared viral samples with third party pharmaceutical companies that patented the strains for vaccine production without Indonesia's knowledge or consent. These vaccines were then offered to Indonesia at prohibitive prices. This event exposed the institutional inequalities that exist in WHO between central and peripheral global actors. While globalization has made it impossible for diseases and viruses to be isolated by countries or borders, the thesis argues that "developing" nations with long colonial histories continue to be exploited in neocolonial contexts, while global institutions such as WHO continue to perpetuate forms of structural violence and inequality.

Intellectual property policy on the global scale can be situated in the context of vaccines and their distribution. This thesis argues that issues of biopiracy involving diseases and vaccines in Indonesia in 2007 allows us to understand how neo-colonial relations operate today. In other words, global vaccine production and distribution can be analyzed from the viewpoint of structural violence and inequality in neocolonial settings. International law mandates that countries share their influenza strains with a World Health Organization (WHO) committee known as the Global Influenza Surveillance and Response System (GISRS). Developing nations like Indonesia that have been subject to colonial histories continue to be exploited in neocolonial contexts. This is seen by the actions of the WHO, who shared viral samples with third party pharmaceutical companies that patented the strains of vaccine production without Indonesia's knowledge or consent. These pharmaceutical companies further then offered their vaccines to Indonesia at prohibitive prices. The institutional inequalities that exist in WHO between central and peripheral global actors became apparent in 2007 through an event in Indonesia related to an

influenza strain. Even though diseases and vaccines cross borders, the biopiracy of virus strains in "developing" nations by global actors, including international organizations such as WHO, reveals how "developed" countries benefit extensively when it comes to vaccine accessibility and distribution for combatting the virus.

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The twenty-first century marks a time where the threat of colonization appears absent from the global stage. The actors of the world seem to have developed a moral code that disapproves of the outright confiscation of lands and territories. Whenever it does occur, there is always a complicated, shrewd legality argued to justify such actions. To act in a way reminiscent of Britain or France in the nineteenth century is not easy in the twenty-first century. Even contemporary forms of imperialism are not undertaken through the instruments of colonialism. However, what threatens global relations in this century instead are the remnants of past colonialism, an emerging force that was first defined in the 1960's as neo-colonialism. Kwame Nkrumah, the first prime minister of Ghana, defined neo-colonialism by arguing that "the State which is subject to it is, in theory, independent and has all the outward trappings of international sovereignty," yet "in reality it's economic system and thus its political policy is directed from outside" (Nkrumah, 3).

The search for raw materials by Europe in the eighteenth century was provoked by the Industrial Revolution when the Western world sought raw materials such as sugar, rice, rubber, and indigo (Beckert, xvii). Today, the Western world continues to demand raw materials while the control of the West over the global market has ensured that this demand is satisfied.

However, production in the West is now increasingly reliant on bioparticles, novel technologies, and digital media. This is seen by looking at the stock market, with pharmaceutical the prominence of companies like Pfizer and Moderna as well as companies like Tesla, Facebook, and Apple. Pfizer and Moderna have made headlines recently for developing a Covid-19 vaccine that is now in widespread global distribution. When we situate these forms of global distribution in longer historical contexts, it reveals how vaccine development and distribution is inseparable from neo-colonial relations understood on a global scale.

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The influenza virus is categorized into three different types according to the World Health Organization. Seasonal influenza describes the flu viruses that circulate and infect humans every year. The seasonal influenza viruses are categorized into influenza A, B, and C. Pandemic influenza is the second type, and it describes the new influenza viruses that emerge and previously did not circulate in humans. Since most of the human population does not have immunity towards these new virus strains, a large proportion of the population will become infected when they emerge. The 1918 pandemic was caused by an influenza virus and was subsequently given the name "Spanish flu." An estimated 20 to 50 million deaths globally were caused by the Spanish flu. The most recent pandemic due to an influenza virus occurred in 2009 when the H1N1 strain emerged, later called the Swine flu. Since this virus has recurred each year since 2009, this influenza is now considered seasonal. The third type of influenza is known as zoonotic influenza. This describes the strains that circulate in animals and eventually infect humans. Many of these types of strains do not easily cross over to humans, but the ones that do

can potentially become pandemic, as well as seasonal influenzas. The H1N1 influenza strain is an example of influenza that was considered zoonotic, pandemic, and now seasonal (WHO, 2021).

The understanding of the influenza virus is rooted in twentieth century science. Surveying past documentation is the most practical method that exists to attempt to understand the history of the flu. Some scholars claim that the first probable documentation of influenza is by Hippocrates in *Corpus Hippocraticum,* also known as the Hippocratic Collection. In 412 B.C, the port-town of Perinthus existed in Northern Greece, now part of Turkey. The 'Cough of Perinthus' is "extensively narrated in the seventh chapter of the sixth book of Epidemics" as "a winter epidemic of an upper respiratory tract infection and its consequences" by Hippocrates (Pappas, 349). However, looking back at Hippocrates' time for evidence of influenza does not give us the same level of clarity as the diseases emerging in later centuries.

Nineteenth century German physician and historian August Hirsch constructed a survey of influenza, indicating the first potential influenza epidemic occurring in 1173 across Italy, Germany, and England. On the "geographical and historical pathology" of influenza, Hirsch writes: "influenza always occurs as an *epidemic* disease, whether within a narrow circle or even confined to particular places, or in general diffusion over wide tracts of country, over a whole continent, and, indeed, not rarely over a great of the globe as a true *pandemic*" (Hirsch, 18). The extensive historical survey of influenza by Hirsch in the 1880s was made possible because, "from the beginning of the 18th century, the quality and quantity of data increased and medical historians were drawn to comment on the number of infected persons, whether they were considered an epidemic or a pandemic, the countries involved, and the possible origins of the virus strain involved" (Potter, 574). The survey by Hirsch, as well as surveys by other historians

at the end of the nineteenth century, has undergone continual and extensive revisions since their publication.

An influenza pandemic occurring in 1510 is speculated by some to be the first influenza pandemic. Contemporary medical historians agree that an influenza pandemic did definitively occur in 1580. Originating in China during the summer, it "spread to Africa, and then to Europe along two corridors from Asian minor and North-West Africa, infecting the whole of Europe from south to the north in a 6-month period, and infection subsequently spread to America" (Potter, 574). Notable outbreaks in the eighteenth century occurred in 1729 and 1781. In 1729, the outbreak "started in Russia in the spring months, spread westwards in expanding waves, to embrace all Europe within a 6-month period and encompassed the whole world over a 3-year period with high death rates" (Potter, 575). In 1781, the outbreak "began in China in the autumn, spread to Russia and from there westwards in widening circles encompass the whole of Europe in a period of 8 months" (Potter, 575). Moving into the nineteenth century, a pandemic occurred in 1830 beginning in China, "from where it spread southwards by sea to reach the Philippines, India and Indonesia, and across Russia into Europe" (Potter, 575). After making its way to North America in 1831-1832, "it recurred in Europe at the same time and recurred again in 1832-1833" (Potter, 575).

The twentieth century saw "the greatest medical holocaust in history," when the Spanish influenza pandemic occurred from 1918-1920 (Waring, 1971). The origins of this pandemic are less clear, with outbreaks in China occurring simultaneously with outbreaks in Detroit and South Carolina. There is more evidence supporting the theory that the first outbreak was in the United States. From here, "infection spread outwards and then eastwards as young Americans were drawn to the army and naval training establishments of the American Expeditionary Force

(AEF), and to the war in Europe" (Potter, 575). AEF personnel traveling to Bordeaux, France by ship in April of 1918 resulted in the spread of infection "to the British Expeditionary Force (BEF) and other forces involved in the war in April/May 1918, and in the same months reached Italy and Spain" (Potter, 575). Following outbreaks in Germany was the first outbreak in Britain. At the same time, "infection reached North Africa in May 1918 and circled Africa to affect Bombay and Calcutta and then China, New Zealand and the Philippines in June 1918" (Potter, 575).

The eventual course of the disease was such that it would become increasingly more virulent. This made the virus more devastating than in any previous pandemic. In his writings on influenza, August Hirsch noted the way the virus was spread aboard boats, where "in several cases of the kind, the crews were attacked, and that too just as suddenly and without warning as when influenza appears on land, while the ships were lying in port or cruising off the coast, no trace of the disease having shown itself either before or after in the same region ashore" (Hirsch, 19). Decades after Hirsch elaborated on the complexity of influenza spread by sea travel, boats traveling from port to port in 1918 spread the virus in the same manner. An influenza outbreak on a boat traveling from Britain to Sierra Leonne was significant that year because "within a few cycles of infection, it was apparent that the disease had become more virulent, with a 10-fold increase in the death rate amongst cases" (Potter, 576). This, along with the fact that "deaths occurred principally in the group of age 20-40 years," made this pandemic unique from previous ones. Further, second and third waves of the virus appeared, and now it is "estimated to have infected 50% of the world's population, and the total mortality was 40-50 million" (Potter, 576).

Since the 1918 outbreak, no pandemic has been as devastating or caused as much destruction. Influenza is especially notable because, as Hirsch wrote back in the nineteenth

century, it “takes a prominent place among the acute infective diseases by reason of its wide prevalence in space and in time; the history of the disease may be followed into the remotest periods from which we have any epidemiological record at all, and its geographic distribution extends over the whole habitable globe” (Hirsch, 7). The IMF defines globalization as a “historical process,” that is the “result of human innovation and technological progress.” Beyond the economic definition that it “refers to the increasing integration of economies around the world, particularly through trade and financial flows,” the IMF recognizes that globalization can refer to “the movement of people and knowledge across international borders,” having “broader cultural, political, and environmental dimensions” (IMF, 2000). Although globalization is a process often confined to the twentieth century, the institutions and mechanisms put in place that allowed globalization to occur were initiated centuries ago. Considering the movement across borders as paramount to globalization, influenza pandemics should be considered in this context. Pandemics do not just affect the health of individuals and cause death. It is characteristic of their nature to disrupt the global order, and this was as true in the past as it is now. The economic implications are disastrous, and there are cultural, political, and environmental implications that are long lasting. As the world has become more integrated, with sharp integration occurring in the twentieth century, the implications of a pandemic have increased in severity and complexity.

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The influenza virus is linked to the concept of internationality. The zoonotic, pandemic, and seasonal definitions of the virus demonstrate this movement. The successful development of the first influenza vaccine occurred at the University of Michigan in 1940. After the seasonal flu

of 1947, scientists became aware that their current flu vaccines were ineffective, which led to the understanding of the virus' tendency to mutate. A global effort was then made to continuously survey and characterize the circulating viruses. The World Health Organization (WHO) Influenza Centre was established in 1948 to collect and characterize the circulating influenzas. At this point, the international feature of influenza was solidified institutionally. In the 1950's, the establishment by WHO of the Global Influenza Surveillance and Response System (GISRS) saw that the genetic evolution of influenza strains would be continuously monitored (CDC, 2019). This system required the cooperation of nation-states to share viral samples so there would be an effective vaccine production for emerging strains.

This idea of sharing viral samples with WHO evolved into a global security measure. The twentieth century global order sees sharing viral samples as being mandated by international law for the purposes of health security (Smallman, 20). This is the viewpoint of developed countries, who are the actors that dominate the current world stage. While the idea of sharing viral particles evolved into law and mandates in the twenty first century for the developed world, the same cannot be said for the developing. Instead "a second paradigm, advanced by the developing world, depicted viral sample sharing as a form of biopiracy, which violated countries' sovereign control of their biological resources" (Smallman, 20). This paradigm shift was initiated by decades of structural violence and inequality within the context of influenza vaccine development and distribution.

In 2007, an action of a developing nation would upset the procedures of the GISRS. Indonesia, a nation that had already suffered a long and damaging colonial history, would challenge the global order maintained by the developed world. To recall, many European powers such as the British, Portuguese, Dutch, and Spanish wished to dominate the spice trade between

Europe and Indonesia during the early stages of European exploration. This trade was heavily monopolized by the Muslim merchants of Vietnam in the fifteenth century. The Dutch eventually established itself as the dominating political and economic power of the Indonesia Java region. The collapse of the Mataram empire, along with the rise of the Dutch East India Company in the eighteenth century, would bring this about. The Dutch interference in the indigenous politics of Java not only granted them economic control but social and political control as well. At the end of the eighteenth century, the company went bankrupt and was nationalized by the Dutch state. Due to Napoleon's occupation of Holland from 1806 to 1815, the Dutch holdings in Indonesia were transferred to the British. Most of the then British holdings were transferred back to the Dutch after the British led defeat of Napoleon at the Battle of Waterloo. The Dutch expanded and secured its holdings in Indonesia throughout the nineteenth century. The beginning of the twentieth century then brought about Indonesian political movements that challenged Dutch control. The World War II era included the Japanese invasion for Indonesia. With Japan's surrender in the war came the opportunity for Indonesia to fight for independence. From 1945 to 1949, the Indonesian National Revolution ensued, resulting in Indonesian Independence in 1949 (Ricklefs, 2004).

Indonesia today holds the fourth largest population by nation and is ranked fifteenth in GDP today. After a negative GDP growth of 13% in the 1990's, the nation's economy has developed in impressive ways.[i] Nonetheless, Indonesia is not the United States, Great Britain, France, or Germany. It has not yet reached the status of what is considered a developed country. As a developing nation, Indonesia is peripheral to the central dominating actors of the globe. Indeed, like all other peripheral nations, Indonesia was mandated to share viral samples with the GISRS. However, the parent of GISRS (WHO) would often share viral samples obtained from

countries with third party pharmaceutical companies without the sample's country of origin having any idea. In 2006, Indonesia shared samples of their new H5N1 Influenza A strain with WHO in accordance with international guidelines. However, Indonesia later learned that WHO, without their knowledge or permission, had then shared this strain with an Australian company who patented the H5N1 Influenza A strain. This company developed a vaccine for this strain and wished to sell the vaccine to Indonesia at a heavily inflated price to protect the population against the strain of virus circulating in the nation (Vezzani, 675).

The Global Influenza Surveillance and Response System (GISRS) functions to act as: 1) a "global mechanism of surveillance, preparedness, and response for seasonal, pandemic, and zoonotic influenza"; 2) "global platform for monitoring influenza epidemiology and disease"; and 3) "global alert for novel influenza viruses and other respiratory viruses" (WHO, 2021). In accordance with WHO laws, countries were obligated to submit clinical specimens to GISRS laboratories for diagnostic purposes and to encourage the development of new vaccines. The decades long practice of sharing viral influenza samples with WHO is part of "a general recognition that an obligation to share virus samples with WHO laboratories is part of WHO law" (Vezzani, 677). The GISRS had put certain regulations in place, including that "there shall be no further distribution of viruses/specimens outside the network of WHO-linked Reference laboratories without the permission of the originating Country/laboratory" (Vezzani, 677). The loopholes in the legal framework of the GISRS were such that there was no longer a clear opposition "to pharmaceutical companies and for the sharing of benefits arising from the commercial exploitation of specimens" (Vezzani, 677). Contrary to what the regulations and legal framework of the GISRS would imply, "viruses are commonly transferred by these

laboratories to drug companies, which use them to manufacture vaccines and other pharmaceuticals without assuming significant, if any, benefit sharing obligation" (Vezzani, 677).

From 2005 to 2006, a series of events occurred that led to Indonesia's confrontation with WHO policies. The long-established practice of sharing viral samples with WHO was regulated by several measures. WHO laboratories were not permitted to "co-author and/or publish results" related to viral samples of countries without that country's permission (Roos, 2008). H5N1 virus samples obtained from Indonesia were presented at international meetings with little to no notification to the Indonesian government. Papers on the analyses of these samples were written by international scientists without the knowledge of Indonesia scientists. Only in the late stages of writing these papers were the Indonesian scientists notified and offered to co-author them.

Furthermore, Indonesia was unaware of the plans made by an Australian pharmaceutical company in late 2006. The company was using viral samples from Indonesia provided by the WHO to develop a vaccine against the H5N1 strain. Pharmaceutical companies having access to Indonesian strains in WHO laboratories was a blatant violation of WHO guidelines. This prompted Indonesia to withhold viral samples from the WHO surveillance program in 2007.

The health minister of Indonesia, Supari, was frustrated by the inability to come up with a pandemic preparedness plan for Indonesia. Back in 2005, Tamiflu was extremely difficult for Indonesia to purchase because it was being stockpiled by Western countries. Any price given by foreign pharmaceutical companies was too high for Indonesia to afford (Smallman, 20). Ironically, it was the central actors of the global order who benefited from Indonesia's participation in the system of sharing viral samples. The vaccines developed in Western nations were made possible only by the will of Indonesia to share their viral particles. In return, Indonesia was unable to prepare for or adequately protect their own population from their own

circulating influenza strains. Edward Hammond wrote that for the developed world, "it came to pass that the WHO's global surveillance system acts as a free virus collection and R&D department for the world's largest vaccine companies, with familiar names such as Sanofi-Pasteur, Novartis, and Astra-Zeneca, yet give very little benefit to developing countries" (Smallman, 24). The continuous frustration with inequality and exploitation by the developed world caused Indonesia to stop sharing viral influenza samples with the GISRS in 2007. Instead, they decided to by-pass WHO and send viral samples directly to an American pharmaceutical company called Baxter Healthcare in order to produce an affordable vaccine (Vezzani, 677) . A diplomatic crisis emerged on the global scale due to Indonesia's actions.

Indonesia's withholding of viral samples from the WHO was strongly criticized by developed countries when they posed the question: "could withholding pathogen samples violate international human rights laws, particularly the right to health?" (Fidler, 2007). Looking at the International Covenant on Economic, Social, and Cultural Rights, State parties are indeed "required to engage in international cooperation with respect to the progressive realization of the right of everyone to the enjoyment of the highest attainable standard of physical and mental health." Specifically looking at what is said about the spread of disease, the Covenant states that "this obligation includes taking steps necessary for the prevention, treatment, and control of epidemic, endemic, occupational, and other diseases" (Fidler, 2007) as well as the "potentially adverse global consequences for international cooperation against the influenza threat" (Fidler, 2007). This argument was "difficult to sustain" against the position Indonesia too, that "its decisions reflect an attempt to use the samples to improve the chances of protecting the health of Indonesians from avian and pandemic influenza, an outcome that would support Indonesia's progressive realization of the right to the health of its people" (Fidler, 2007). Furthermore, the

H5NI influenza strain is “not readily transmissible from human to human, and thus this strain is not the cause of cross-border disease spread” (Fidler, 2007). Indonesia just happened to have an outbreak of H5N1 in 2005 that was quite severe with 63 deaths, which was “more than any country in which avian influenza has appeared” (Fidler, 2007).

The H5N1 strain was indeed a threat to Indonesia, and WHO’s access to viral samples of the strain was considered essential for proper surveillance and global protection. On the topic of surveillance, it was claimed that viral samples allow public health officials to survey “changes in pathogenic strains, such as the development of drug resistant strains,” which is important because of “the potential for avian influenza to mutate into virulent strains capable of sustained human to human transmission” (Fidler, 2007). However, the GISRS labs in developed countries were taking advantage of the access that they themselves mandated. They were not just using viral samples to prevent the global spread of disease but instead were profiting from isolated outbreaks in developing nations like Indonesia. Arguing that developed nations are actually helping developing nations in relation to vaccine production proved unreasonable because, as “vaccine development based on the samples occurs mainly by pharmaceutical companies in developed countries,” these vaccines were then sold at prohibitive prices, making them “more expensive for developing countries to obtain” (Fidler, 2007). The fact that influenza vaccine manufacturing capabilities are mainly found in developed countries is hardly ever reassuring to developing countries because they “fear that they will have little to no access to vaccine if a pandemic strain emerges.” The issue of equity was clearly involved in Indonesia’s decision to withhold samples as “developing country participation in sharing viral samples to support global surveillance produces a process that renders access to vaccine interventions inequitable” (Fidler, 2007).

Although there was criticism against Indonesia's decision to withhold viral samples, many fellow developing countries voiced support for the decision. Thailand specifically made a statement at the WHO Executive Board Meeting in 2007 stating: "we are sending our virus samples to the rich countries to produce antivirals and vaccines. And when the pandemic occurs, they survive and we die… We are not opposed to sharing of information and virus samples, but on the condition that every country will have equal opportunity to get access to vaccine and antivirals if such a pandemic will occur" (quoted in Fidler 2007).

Due to the advancements in science and technology over the course of the twentieth century, new legal frameworks and regulations related to biological compounds had to be conceived. The 1992 Rio Convention on Biological Diversity (CBD) "contributed to the formation of the unwritten international rule establishing state sovereignty over biological and genetic resources," which includes "any material of plant, animal, microbial, or other origin containing functional units of heredity" (Vezzani, 678). It is acknowledged that viruses fall into the category of genetic resources, which is clearly established by the CBD's Biosafety Protocol. The CBD further provides protection for developing nations, establishing that "each state has the right to authorize access by foreign persons to the biological and genetic resources of its territory and to establish the conditions for such access, including prior informed consent and benefit sharing" (Vezzani (Ni), 678). When reading the CBD, the right of state sovereignty over viral particles is quite clear, yet the global politics surrounding the legal framework put forth is much more complex. A nation's position on the CBD legal framework for virus sharing plays out in a binary fashion, with developing nations voicing support for Indonesia's actions and more developed nations opposing their decision on all fronts. Developing countries like Brazil and again Thailand argued that "virus and other pathogenic organisms are biological resources and

therefore are included within the scope of CBD," and that "all species and their derivatives obtained from a Member State belong to the Member State" (Vezzani, 678). On the other hand, developed nations oppose the "extension to human viruses of the sovereignty principle," taking the position that "there was no link between the CBD and sharing of human influenza viruses" (Vezzani, 678).

Indonesia's decision to go against International law was justified through multiple avenues. The guidelines of WHO do not explicitly allow the GISRS to share viral samples obtained to be shared to third parties without the knowledge of the sample's origin of country. The 2005 WHO guidance issued on the subject of viral sample sharing explicitly states: "The WHO Reference Laboratories will seek permission from the originating country/laboratory to coauthor and/or publish results obtained from the analyses of relevant viruses/samples." In addition, "there will be no further distribution of viruses/specimens outside the network of WHO Reference laboratories without permission from the originating country/laboratory" (Roos, 2008). It is precisely the actions that blatantly go against WHO guidance by WHO itself that can be characterized as an act of biopiracy. Virus samples can also be thought of as intellectual property since, after they are patented, they initiate vaccine development and mass production. Indonesia did eventually share samples with the GISRS in 2007, but not without confronting the way in which they operate.

The "alarm in global public health" caused by Indonesia's decision to withhold samples prompted WHO to meet with the Indonesia government "to find a way to re-start sample sharing and to address Indonesia's concerns about inequitable access to avian and pandemic influenza vaccines" (Fidler, 2007). In February of 2007, a joint statement was issued by the Indonesian Ministry of Health and WHO that "the responsible, free, and rapid sharing of influenza viruses

with WHO, including H5N1, is necessary for global public health security" (Fidler, 2007). Disregarding the CBD in the context of viral sample sharing, developed countries argued that "it would be contrary to existing human international rights law for a state persistently to impede access to clinical samples whose sharing was indispensable in combatting the spread of a pandemic, causing death and suffering all over the world" (Vezzani, 679). It is clear from the arguments made by developed countries against Indonesia's actions that the legal framework and regulations put forth by international organizations such as the CBD and WHO were able to be manipulated for the benefit of developed nations.

Indonesia would continue negotiations through the 2009 Swine Flu pandemic. During this pandemic, the poorer countries where H1N1 samples were obtained for vaccine development wished to be among the first to get vaccine distribution. This task was too difficult for companies because they said they "lacked the capacity to fill such orders" for "poorer and more populous countries" (Smallman, 22). If the pharmaceutical companies that patent and gain profit from the vaccines should not be authorized to do so without any form of repayment back to the sample's country of origin, and if the vaccines developed for the strains circulating in these countries of origin should be attainable and affordable for them, the reality exists that the only way these countries could obtain vaccines was first by having the companies distribute vaccines to less populous and richer countries of the developed world. After this, these nations could then "share excess vaccine with developing countries" (Smallman, 22).

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In conclusion, this entire operation represents nothing less than a form of twenty-first century neo-colonialism, at least in the sense once described by Nkrumah, who argued that "the result of neo-colonialism is that foreign capital is used for the exploitation rather than for the development of the less developed parts of the world" (Nkrumah, 20).

After Indonesia's temporary halting of viral influenza samples in 2007 and the structural violence exposed by the 2009 Swine flu pandemic, member states of WHO developed a Pandemic Influenza Plan in 2011. In this plan, the issues that Indonesia had experienced with the way the GISRS operated were addressed. What resulted from this plan was a global legal framework that allowed developing countries to benefit from their cooperation with the GISRS that had no precedence. In the case of a pandemic, it would no longer be developed nations but rather the private pharmaceutical companies that would distribute vaccines directly to developing nations.[ii] This plan may not have addressed every single contributor to structural violence by the developed world on the developing world, but it provided a means to stop the exploitation legally justified by the developed world. The legal argument against biopiracy was effective because it pressured international organizations by "depicting them as Neo-imperial instruments" (Smallman, 23). The argument against this form of exploitation was so strong because, "by framing the issue in terms of biopiracy rather than global health inequality, Indonesia suggested that developed countries were actively doing something wrong, instead of passively failing to provide charity" (Smallman, 23).

How the institutions of the developed world like WHO maintain neo-colonial relations can also be understood by rethinking the concept of the border that seems so essential to theories of globalization. The containment of the influenza virus to specific geographic locations was largely made impossible by the world wars. The same strain was able to spread globally,

infiltrating boundaries and borders. However, diseases that cross borders are unique from any person, object, or idea that also crosses borders. Spreading disease is only similar in the sense that it physically crosses a border. Other than that, the movement of disease from one side of a border to the other has its own unique set of implications. As invisible and microscopic viruses are, they still have an undeniable concreteness. Their genetic material and mechanisms of infections are concrete enough to have substantial implications.

The question thus remains how this displacement between the invisible and the concrete is both shaped and fundamentally transformed by neo-colonial practices. For the dominating global actors today are able to act in structurally violent way because, as Balibar argues, "the borders within which the condition for relative democracy have in some cases been won have themselves always been absolutely anti-democratic institutions, beyond the reach of any political purchase or practice" (Balibar, 84). Even though nations are no longer labeled as colonies or parts of empires, they are not truly sovereign in the way in which their "independence" suggests. Their economic security is bound to developed nations, and their right to protect themselves from deadly diseases is not given. When existing operations of the global order are pointed out as explicit forms of neo-colonialism, the very sovereignty of developing nations is clearly in question.

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